

ABSTRACT

5 A probe card assembly includes a probe card, a space
transformer having resilient contact structures (probe elements)
mounted directly ^{thereto} ~~to~~ (i.e., without the need for additional
connecting wires or the like) and extending from terminals on
a surface thereof, and an interposer disposed between the space
transformer and the probe card. The space transformer and
interposer are "stacked up" so that the orientation of the space
transformer, hence the orientation of the tips of the probe
10 elements, can be adjusted without changing the orientation of
the probe card. Suitable mechanisms for adjusting the
orientation of the space transformer, and for determining what
adjustments to make, are disclosed. The interposer has
resilient contact structures extending from both the top and
15 bottom surfaces thereof, and ensures that electrical connections
are maintained between the space transformer and the probe card
throughout the space transformer's range of adjustment, by
virtue of the interposer's inherent compliance. Multiple die
sites on a semiconductor wafer are readily probed using the
disclosed techniques, and the probe elements can be arranged to
20 optimize probing of an entire wafer. Composite interconnection
elements having a relatively soft core overcoated by a
relatively hard shell, as the resilient contact structures are
described.